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Information Society and Media Directorate General

Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Cyprus

6 / 2006

Key findings

Almost all schools in Cyprus now use computers for teaching and have internet access. However, only 31% use the internet via a broadband connection. With this figure Cyprus ranks at number 25 of the 27 countries participating in the survey, leaving behind only Poland and Greece. There is a large variation between school types: while only 14% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 73%. .

A very high 90% of the schools in Cyprus using computers for teaching use them in classrooms with the highest percentage being achieved in primary schools (95%). With a figure of 85% (EU25: 46%) of ICT use in classrooms in vocational schools, Cyprus ranks first in Europe. (However, this figure is based on only three observations).

75% of the classroom teachers in Cyprus have used computers in class in the 12 months prior to the survey, with little variation across school types and between urban and rural areas. Most frequent and intensive use is made by teachers in primary schools (87%).

Not surprisingly, the older the teachers (indicator used here: years of teaching experience), the less they make use of computers and the internet in schools.

25% of teachers in Cyprus still do not use computers in class. When asked for the most important barrier, by far the most important issue us "lack of computers" in their schools stated by 57%. Only in Lithuania, Latvia, France and Slovenia higher figures are achieved.

At 36%, the percentage of teachers with insufficient access to ICT and the internet in Cyprus is significantly above the European average of 20%. A very high 88% also wish there were better support and maintenance actions taken.

Teachers in Cyprus are very much in favour of ICT use in class and clearly see the benefits. Less than 1% state that there are "no or unclear benefits in using ICT". Again, less than 1% of the teachers not using ICT express this opinion. This compares to a European average of 16% and puts Cyprus in the top position in Europe.

Cypriot teachers feel most competent at using a text processor programme and with using presentation software packages but are less confident in using e-mail and downloading and installing software.

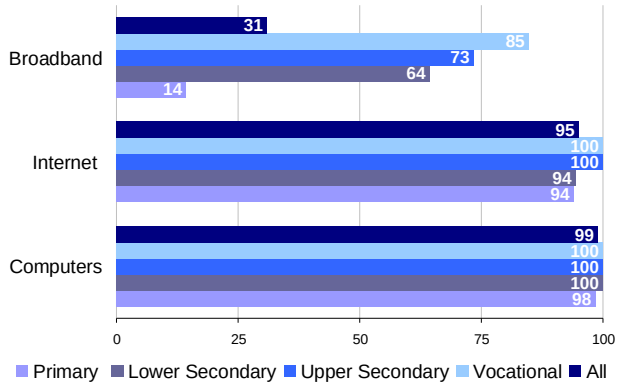
Primary school teachers seem to be less ICT competent than those in upper secondary and vocational schools but they rank top when comparing their competence in using a text processor and a presentation software package with their counterparts in other European countries.

Motivation of teachers for using ICT is high in Cyprus. Over 95% of Cypriot teachers see significant learning benefits for pupils using computers in class and say that pupils are more motivated and attentive when computers and the internet are used in class. With this figure, Cyprus ranks second in Europe, and is first at primary school level. Cypriot teachers seem to have fully internalised the use of ICT as a key element of teaching in schools.

ICT Equipment and Internet in Schools

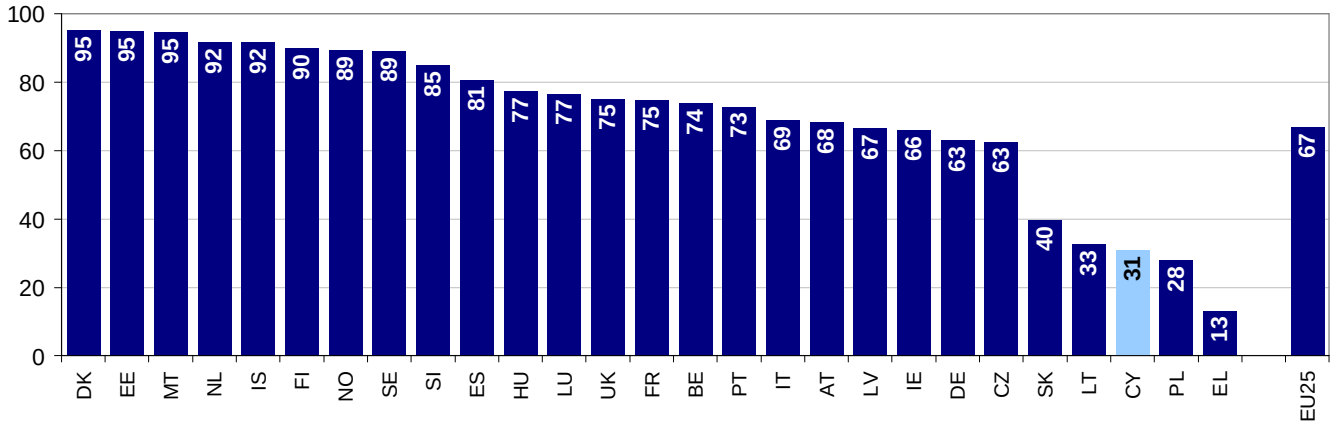
Almost all schools in Cyprus now use computers for teaching and have internet access. However, only 31% use the internet via a broadband connection. With this figure Cyprus ranks at number 25 of the 27 countries participating in the survey, leaving behind only Poland and Greece. There is a large variation between school types: while only 14% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 73% and vocational schools with 85%. There is also some variation with regard to broadband access between urban and rural areas: 41% of schools in densely populated areas have broadband access compared to 21% of schools in thinly populated areas.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Cyprus 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.* ***Note****: Vocational schools is based on only 3 observations.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

ICT equipment in Cypriot schools 2006

				Educational Level (CY)				Type of locality (CY)		Internet Access (CY)	
	Total CY	Total EU25	Total NMS10	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Intermediate and thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	12.4	11.3	7.1	7.3	*12.1**	*18.6**	*19.8***	12.9	11.3	9.5	15.1
... of which internet connected	8.9	9.9	6.4	6.1	*9.9**	*12.1**	*9.6***	9.0	8.9	7.4	10.7
Percentage of schools having...											
Computers for teaching [b]	98.9	98.7	96.7	98.5	*100.0**	*100.0**	*100.0***	97.9	100.0	100.0	100.0
Internet access [c]	95.0	96.2	94.7	93.9	*94.4**	*100.0**	*100.0***	90.3	100.0	100.0	100.0
Broadband internet access [d]	31.0	66.9	43.4	14.3	*64.4**	*73.4**	*84.7***	40.7	20.6	0.0	100.0
A website [e]	50.9	63.0	66.7	34.0	*87.5**	*93.6**	*100.0***	61.8	39.3	41.3	79.1
An e-mail address for the majority of teachers [f]	49.1	65.2	48.1	45.1	*57.5**	*61.0**	*57.6***	38.3	60.5	55.5	43.6
An e-mail address for the majority of pupils [g]	6.9	23.5	24.4	2.5	*14.7**	*18.5**	*15.3***	3.8	10.2	7.2	7.5
A LAN [h]	22.8	55.2	60.4	16.8	*42.6**	*33.4**	*42.4***	22.2	23.5	17.5	37.6
An intranet [i]	17.3	40.8	26.9	18.7	*21.5**	*8.3**	*42.4***	15.1	19.7	20.2	14.2
An external support or maintenance contract [j]	33.3	47.1	44.3	30.1	*47.0**	*36.9**	*42.4***	27.7	39.4	36.0	33.2
Percentage of schools using computers for education in...											
Computer labs [k]	73.4	80.5	94.6	62.0	*100.0**	*100.0**	*100.0***	78.7	67.8	65.5	93.4
Classrooms [l]	89.5	61.4	29.5	95.3	*74.1**	*77.4**	*84.7***	82.1	97.2	93.4	80.1
School library [m]	41.2	33.4	36.8	22.7	*75.8**	*90.3**	*100.0***	42.5	39.8	30.5	68.5
Other locations accessible for pupils [n]	38.3	27.0	20.2	27.1	*56.1**	*72.8**	*15.3***	38.5	38.1	31.8	56.4

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Those schools with a broadband connection to the internet are much more likely to have a more sophisticated ICT infrastructure including a school website, the use of a LAN or the availability of an intranet.

Only 51% of schools have a website, 49% offer e-mail to teachers, and only very few schools (7%) do so to pupils.

A very high 90% of the schools in Cyprus using computers for teaching use them in classrooms with the highest percentage being achieved in primary schools (95%). With a figure of 85% (EU25: 46%) of ICT use in classrooms in vocational schools, Cyprus ranks first in Europe. Computers in the school library are more or less restricted to upper level schools.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also, and very widely, as a separate subject.

Computer sciences are taught as a separate subject in all secondary schools and slightly more than half of the primary and vocational schools. In 86% of the schools computers and internet are integrated into the teaching of most subjects. This holds especially true for primary and secondary schools (84% - 87%) but less so for vocational schools (58%).

75% of the classroom teachers in Cyprus had used computers in class in the 12 months prior to the survey, with little variation across school types and between urban and rural areas. Most frequent and intensive use is made by teachers in primary schools (87%). For most teachers, this includes not only using a computer for presentation purposes but also the use computers by pupils in class.

Around a third of the teachers using computers use them in less than 10% of all lessons. Only 11% state that they use computers in more than half of their lessons. Teachers in secondary and vocational schools use computers in class more frequently than their colleagues in general education with between 40 – 44% using computers in more than a quarter of their lessons.

Use of computers in class in Cyprus 2006

Assessments of the head teacher		Total CY	Total EU25	Total NMS10	Educational Level (CY)				Type of locality (CY)		Internet Access (CY)	
					Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Intermediate and thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	67.1	54.7	91.2	53.6	*100.0**	*100.0*	*57.6***	70.4	63.6	61.6	81.2
	Disagree	32.1	43.7	8.4	45.3	*0.0**	*0.0*	*42.4***	29.6	34.7	37.2	18.8
	Don't know	0.8	1.6	0.4	1.2	*0.0**	*0.0*	*0.0***	0.0	1.7	1.3	0.0
Computers and the internet are												
integrated into teaching of most subjects	Agree	85.6	75.3	73.1	86.7	*84.6*	*83.9**	*57.6***	83.2	88.1	83.4	90.5
	Disagree	14.4	24.1	26.4	13.3	*15.4*	*16.1**	*42.4***	16.8	11.9	16.6	9.5
	Don't know	0.0	0.6	0.4	0.0	*0.0*	*0.0**	*0.0***	0.0	0.0	0.0	0.0
used for teaching traditional subjects or basic skills	Agree	71.4	75.8	72.3	78.8	*43.1*	*59.7**	*57.6***	71.6	71.2	77.4	61.0
	Disagree	27.4	22.8	26.0	21.2	*56.9*	*33.5**	*42.4***	26.1	28.8	21.7	37.1
	Don't know	1.2	1.4	1.7	0.0	*0.0*	*6.7**	*0.0***	2.3	0.0	0.9	1.8
used for teaching foreign languages	Agree	73.3	56.6	71.1	76.9	*45.4*	*80.5**	*57.6***	73.6	72.9	75.6	68.4
	Disagree	26.3	40.1	28.0	23.1	*54.6*	*17.0**	*42.4***	25.5	27.1	24.4	30.2
	Don't know	0.4	3.3	0.8	0.0	*0.0*	*2.5**	*0.0***	0.8	0.0	0.0	1.4
used for coping with students with special needs/ handicaps	Agree	89.4	71.7	58.3	95.5	*77.7*	*75.0**	*57.6***	87.4	91.4	90.9	84.9
	Disagree	9.3	23.7	31.6	3.0	*22.3*	*23.1**	*42.4***	12.6	5.8	7.0	15.1
	Don't know	1.4	4.6	10.1	1.5	*0.0*	*1.9**	*0.0***	0.0	2.8	2.1	0.0

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Teachers using computers in Cyprus do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes which in most categories is around or above the European average.

The learning material that is used most includes offline learning materials such as CD-ROMs (84%) and material from established educational sources (80%). In primary schools more intensive use is made of material that is available on the school's computer network or database (60%).

Not surprisingly, the older the teachers (indicator used here: years of teaching experience), the less they make use of computers and the internet in schools.

42% of younger teachers with less than five years of teaching experience use ICT in more than 25% of their lessons while this figure just reaches 19% among those with more than 20 years teaching experience.

25% of teachers in Cyprus still do not use computers in class. When asked for the most important barrier, by far the most important issue (stated by 57%) was "lack of computers" in their schools. Only in Lithuania, Latvia, France and Slovenia are higher figures achieved.

All other barriers receive much lower ratings. Even the lack of adequate skills of teachers does not seem to be a major problem since just 14% state this as a barrier compared to a EU25 average of 23%.

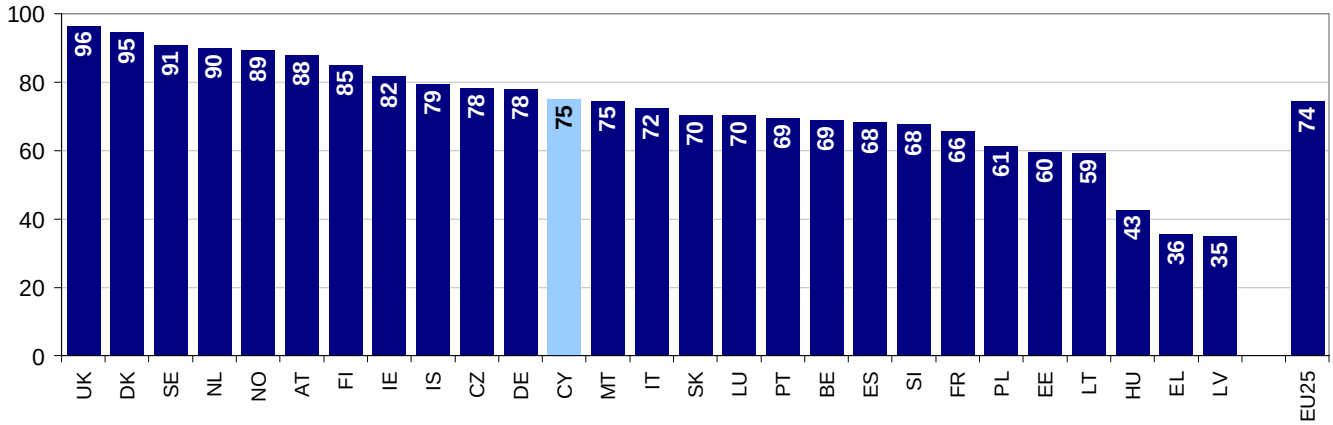
In total "lack of equipment in school" is expressed by a substantial 14% of all teachers (25% non-users multiplied with 75% of teachers agreeing to this item).

Teachers in Cyprus are very much in favour of ICT use in class and clearly see the benefits. Less than 1% state that there are "no or unclear benefits in using ICT".

Neither is "lack of interest" a major issue among teachers in Cyprus. Less than 5% give this as a constraint compared to a European average of 9%.

Although virtually all schools in Cyprus are at least equipped with some computers, the survey results suggest that there seems to be some scope for further ICT-infrastructure improvements at schools such as an increase of the number of computers in total and per pupil, where Cyprus ranks around the European average.

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Cyprus 2006

Percentage of teachers who …	Total CY	Total EU25	Total NMS10	Educational Level (CY)				Type of locality (CY)			Years of teaching experience (CY)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	75.0	74.3	61.3	87.2	39.8	50.7	*58.2**	70.9	72.8	81.1	75.2	79.4	78.1	60.3
…use a computer in class to present or demonstrate	68.4	63.4	55.5	82.3	32.5	38.6	*38.6**	63.1	69.3	75.2	68.3	73.8	71.5	52.5
…have pupils use a computer in class	50.9	66.3	53.8	61.3	17.9	32.7	*33.7**	53.1	47.2	48.8	44.9	49.2	60.5	40.1

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Frequency of computers use in class in Cyprus 2006

Percentage of all teachers *using computers in class* who …	Total CY	Total EU25	Total NMS10	Educational Level (CY)				Type of locality (CY)			Years of teaching experience (CY)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
…use computers in 5% and less of all lessons	17.6	18.5	15.0	16.6	*27.1**	20.6	*0.0***	17.8	*17.0**	17.6	17.8	20.6	13.8	22.6
in 6 to 10% of lessons	18.0	22.5	17.7	19.1	*13.9**	11.9	*14.1***	17.4	*15.8**	19.1	17.9	12.1	18.0	30.6
in 11 to 24% of lessons	26.6	22.2	22.1	27.1	*21.1**	23.5	*46.4***	28.9	*25.4**	24.3	21.6	22.9	32.2	27.5
in 25 to 50% of lessons	26.6	20.2	24.0	29.4	*7.2**	18.1	*39.5***	24.1	*26.8**	29.5	28.9	29.7	26.7	14.8
more than 50% of lessons	11.2	16.5	21.3	7.9	*30.8**	25.9	*0.0***	11.8	*15.0**	9.6	13.8	14.6	9.3	4.4

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Source of educational material used in class in Cyprus 2006

Percentage of all teachers *using computers in class*[2] who …	Total CY	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
…use material they have searched the internet for	77.3	82.7	81.8	76.4	*76.7**	83.8	*87.4***	77.9	*78.8**	76.2
…use existing online material from established educational sources	80.3	74.2	61.8	82.7	*65.0**	72.9	*62.1***	80.0	*75.6**	81.7
…use material that is available on the school's computer network or database	54.4	63.1	52.7	60.4	*20.8**	29.8	*50.7***	55.4	*47.9**	54.7
…use electronic offline material (such as CD ROMS)	84.3	83.0	82.2	85.8	*72.4**	81.6	*78.8***	82.7	*77.1**	87.7
…use other learning material when using computers in class	7.4	8.8	10.8	8.8	*1.7**	1.4	*0.0***	10.4	*11.8**	3.1

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Barriers to computer use in class in Cyprus 2006

Percentage of all teachers ***not*** *using computers in class*	Total CY	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	57.2	48.8	49.0	49.1	*75.2**	50.0	*52.9***	58.7	*72.5**	48.8
Lack of adequate content/material	20.5	20.3	16.5	12.0	*36.2**	14.3	*35.2***	24.0	*27.0**	11.2
Lack of content in national language	2.8	8.6	5.7	2.0	*2.6**	4.3	*0.0***	1.7	*14.3**	1.1
Lack of adequate skills of teachers	14.0	22.5	9.8	12.0	*15.8**	14.2	*17.6***	15.6	*14.3**	10.5
No or unclear benefits	0.5	16.2	6.8	0.0	*0.0**	1.6	*0.0***	0.9	*0.0**	0.0
Lack of interest of teachers	4.7	8.9	3.3	8.9	*1.1**	3.6	*0.0***	2.6	*6.3**	8.3
Subject does not lend itself to being taught via computers	21.1	24.4	25.0	30.3	*5.5**	24.5	*29.5***	19.9	*25.8**	21.9
Other	13.8	21.3	20.3	8.3	*8.2**	25.0	*17.6***	16.1	*0.0**	14.1

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Cypriot schools and their use is steadily improving. The share of teachers in Cyprus - but also in the European Union in general - who believe that computers and the internet should not at all be used in schools, is very low – below 1%. Cypriot teachers are positive about the different applications of ICT in teaching and achieve figures around or slightly above the European average regarding attitudes that ICT should be used for letting pupils do exercises and practise (65%), letting pupils retrieve information in a self directed manner (91%) and for collaborative and productive work by pupils (83%). There are only small differences across school types. A majority of Cypriot teachers (60%) still believe that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks around the EU25 average figure. This attitude is most prominent among teachers in primary schools (65%) and least prominent in vocational schools (40%). It is interesting that there is no common pattern across the European countries. Only in some countries – including Cyprus and e.g. the UK, Norway, Iceland, but also Spain – do teachers in primary schools express this opinion much more strongly and to a larger extent compared to higher-level schools.

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

The majority of Cypriot teachers (but less than the European average) are still more or less satisfied with the technical access means at their schools: 68% state that their school is well equipped with computers and 62% express the opinion that their internet connection is fast enough. However, a very high 88% wish there were better support and maintenance actions taken. In terms of content 37% state problems with respect to finding adequate learning materials and 32% argue that existing material is of poor quality.

Attitudes on the Usefulness of ICT use in Teaching in Cyprus 2006

Percentage of teachers saying computers/internet should be used for …	Total CY	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	64.9	79.9	78.8	65.6	58.6	68.5	*55.0**	64.2	66.6	65.4
Letting pupils retrieve information in a self-directed manner	90.9	85.0	87.8	91.0	88.4	92.1	*92.6**	92.9	86.1	89.3
Teaching about office tools	60.4	61.3	51.0	64.6	50.7	52.7	*40.3**	61.1	62.5	59.1
Collaborative and productive work by pupils	83.0	80.5	67.2	85.3	81.1	75.5	*77.9**	81.7	84.8	84.3
Computer/internet should not be used for any of these in teaching	0.4	0.6	0.5	0.3	1.4	0.0	*0.0**	0.3	0.0	0.6

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers ;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Competence in using ICT

Cypriot teachers feel most competent at using a text processor programme and with using presentation software packages but are less confident in using e-mail and downloading and installing software.

Primary school teachers seem to be less ICT competent than those in upper secondary and vocational schools but they rank top when comparing their competence in using a text processor and a presentation software package.

Motivation for ICT use in Schools

Over 95% of Cypriot teachers see significant learning benefits for pupils using computers in class and say that pupils are more motivated and attentive when computers and the internet are used in class. With this figure, Cyprus ranks second in Europe, and is first at primary school level. Cypriot teachers seem to have fully internalised the use of ICT as a key element of teaching in schools.

ICT Readiness of Teachers – the ACM Model

The ACM model as developed by Viherä and Nurmela (2001)[3] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

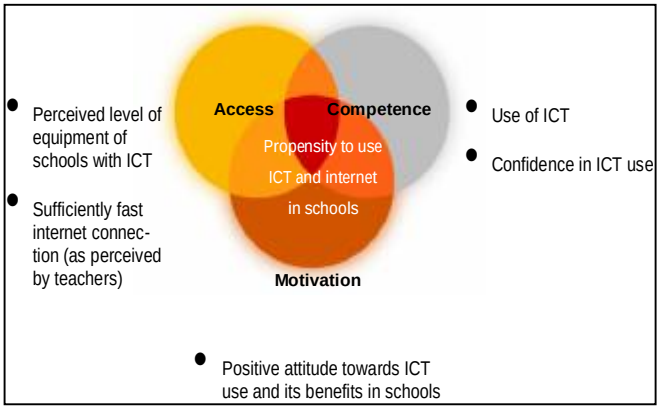
Teachers' access, competence and motivation for using ICT in class 2006

Percentage of teachers agreeing or strongly agreeing:	Total CY	Total EU25	Total NMS10	Educational Level				Subject of teaching					
				Primary	Lower secondary	Upper secondary	Vocational	General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistical, crafts education	Vocational education
Access													
Our school is well equipped with computers [a]	68.1	74.2	76.5	68.4	57.8	73.2	*78.7*	72.4	64.0	60.5	67.9	*60.2**	*90.5**
The internet connection we have is sufficiently fast [b]	61.8	77.2	78.2	57.2	76.4	72.2	*71.3*	56.3	61.9	51.0	61.1	*57.2**	*78.4**
Better technical maintenance and support is required in our school [c]	88.4	64.8	64.6	93.8	80.0	71.7	*73.0*	95.8	89.5	94.9	90.2	*88.3**	*78.3**
Existing teaching materials on the Internet are of poor quality [d]	31.6	29.9	29.3	35.1	20.9	23.1	*12.1***	46.0	25.1	*36.1**	35.8	*29.9**	*22.3**
It is hard to find adequate learning materials for teaching [e]	37.3	38.7	30.5	38.2	31.6	39.3	*14.7*	38.8	36.0	36.6	39.2	*35.8**	*24.6**
Motivation													
Pupils are more motivated and attentive when computers and the internet are used in class [f]	95.1	86.3	90.1	97.0	93.6	89.1	*85.8*	98.2	96.4	90.4	95.5	*95.3**	*91.1**
Using computers in class does not have significant learning benefits for pupils [g]	14.7	20.7	9.5	12.7	15.9	22.9	*14.2**	10.3	15.9	13.3	14.3	*10.1**	*12.5**
Competence													
Teachers in our school do not have sufficient computer skills [h]	41.6	42.0	30.6	33.0	66.6	60.6	*72.9*	31.9	40.3	38.7	37.0	*38.7**	*63.7**
Competence / computer skills (Percentage of teachers who feel very confident at…)													
Using text processors [i]	80.9	65.0	63.2	81.8	*86.2**	71.8	*85.9***	88.2	78.2	*86.1**	81.7	*88.8**	*68.2**
Creating electronic presentations [j]	65.8	34.0	41.0	64.1	*85.2**	67.2	*77.4***	66.6	63.9	*72.4**	66.2	*71.0**	*59.7**
Using e-mail [k]	61.8	65.9	64.8	60.1	*74.8**	67.2	*49.3***	59.3	57.8	*67.3**	61.2	*77.7**	*54.1**
Downloading and installing software [l]	35.4	35.8	34.6	32.1	*53.7**	48.5	*37.9***	35.0	29.7	*25.6**	37.9	*32.6**	*40.8**

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11.* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases; "xx.x** " based on less than 10 cases.*

These are: access (to computers and the internet at school); competence (in using the computer software and the internet, and applying it for teaching purposes); and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

The Access-Competence-Motivation Model



Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 34% of the teachers belonging to this group, Cyprus ranks at 17th which places the country in the bottom half of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as key barriers. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

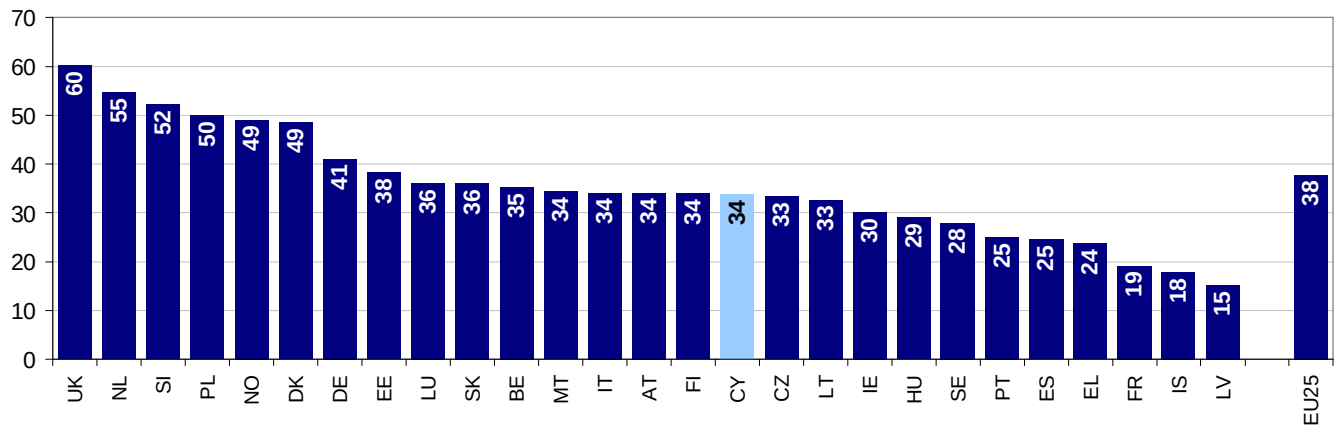
The situation in Cyprus is different: the percentage of teachers with insufficient access to ICT and the internet in Cyprus is at 36% and as such significantly above the European average of 20%. On the contrary, motivation of teachers for using ICT is much higher in Cyprus.

Access, Motivation and Competence of Teachers for Using ICT in Schools in Cyprus 2006

CY	EU25	Access	Competence	Motivation
3.7	4.3	~~Access~~	~~Competence~~	~~Motivation~~
1.8	3.9	**Access**	~~Competence~~	~~Motivation~~
8.1	9.7	~~Access~~	**Competence**	~~Motivation~~
6.9	5.0	~~Access~~	~~Competence~~	**Motivation**
6.2	13.7	**Access**	**Competence**	~~Motivation~~
3.9	4.8	**Access**	~~Competence~~	**Motivation**
35.6	20.7	~~Access~~	**Competence**	**Motivation**
33.8	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [4]

ICT Readiness of Teachers in Cyprus: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [5] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[6]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools, which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person that was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels, the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

With a population of 715 000 inhabitants, Cyprus is one of the smallest member states of the EU. It has a top pupil/teacher ratio in primary schools, but spends less on tertiary education than any other country in Europe. With 1.9 births per woman and a good life expectancy, it is a fast growing country.

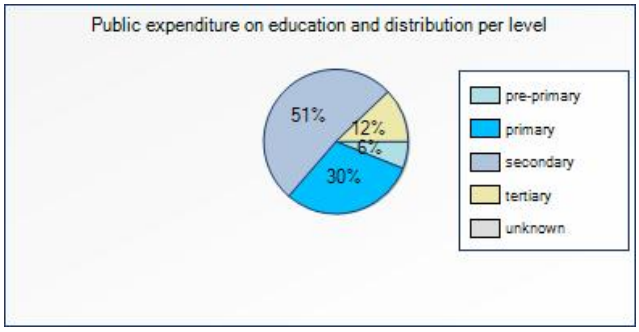
General Population Data for Cyprus 2002/03[7]

Total population (000)	715
Annual population growth rate (%)*	0.6
Population 0-14 years (%)	21
Rural population (%)*	29
Total fertility rate (births per woman) *	1.9
Infant mortality rate (0/00) *	6
Life expectancy at birth (years) *	78
GDP per capita (PPP) US$ *	18,160
GDP growth rate (%)*	2
* World Bank World Development Indicators	

Resources for Education in Cyprus 2002/03

Pupil / teacher ratio (primary)	19
Public expenditure on education :	
as % of GDP	6.3
as % of total government expenditure	…
Distribution of public expenditure per level (%):	
pre-primary	6
Primary	30
Secondary	51
Tertiary	12
Unknown	.

Resources for Education in Cyprus 2002/03



The Educational System in Cyprus[8]

In 2002, the number of people aged 29 or under was 311,664 (43.6% of the total population). In the government controlled areas, the number of children of compulsory school age (6-15) was 107,895 (15.1% of the population). The official languages of instruction are Greek and Turkish.

Most pupils in primary and secondary education (91.3%) attend public-sector schools, which are set up and funded by the government. Private-sector schools are mainly self-funded. Those which are recognised as “non-profit making associations” can be co-funded by the government and other organisations or individuals. The Ministry of Education and Culture is responsible for the administration, organisation and all decisions concerning the use of financial resources by schools. A number of post-secondary institutions offering specialised professional training remain under the authority of various ministries: Labour and Social Insurance, Agriculture, Natural Resources and the Environment, Justice and Public Order, Commerce, Industry and Tourism, and Health. The inspectorate of the Ministry of Education and Culture has the overall responsibility for supervising the proper functioning of the schools.

The use of ICT in Education[9]

To reform the educational system, the Cypriot Government has indicated its commitment and political determination by commissioning a study on an overall Educational Reform providing for developments at all levels of education.

One of the main priorities identified is the integration of ICT in education in both the primary and the secondary sector of education. At the secondary level of education, ICT is used both as a subject in the school curriculum, aiming at computer literacy, and as a teaching aid. In pri-

mary education, ICT is only used as a dynamic tool in the teaching and learning process. The number of computers in schools, both primary and secondary, has increased considerably and, consequently, the ratios of pupils per computer have also been improved.

Structural changes in the sector of upper secondary general education entailed the introduction of a new institution offering pupils more flexibility in deciding on their optional subjects, while in the sector of secondary technical and vocational education, structural changes were connected with the reorganisation of the system of directions offered. In both cases changes were coupled with the development of new curricula and the promotion of new teaching methods.

Moreover emphasis is placed on the training of teachers in basic ICT skills. A number of teachers have already been trained at the Pedagogical Institute as part of a large programme of training of teachers in ICT.

There is no organised system for providing incentives to invest in education and training, e.g. using tax and benefit systems. Occasionally, financial incentives for in-service training may be given to teachers. Another incentive for teachers to upgrade their professional qualifications is the system of credits given for to them promotion purposes upon completing a postgraduate course leading to a recognised degree, e.g. Master or Ph.D. This incentive seems to be working particularly well in primary education, where large numbers of teachers are involved in postgraduate studies.

Apart from the teacher training programme in ICT, there is another ambitious programme (budget of around €130 million) aiming to integrate ICT in all areas of the curriculum in primary and secondary education. The programme for upper secondary education is funded by the European Social Fund, in the context of the SPD for Objective 3, while the programme for primary and lower secondary education is funded by the Cyprus Government.

The Study

There is a lack of information on the actual use of ICT for learning in schools and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway. .

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 Base (100%) = all teachers who have used a computer in class in the last 12 months.

3 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

4 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree to "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

5 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

6 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

7 Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

8 Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

9 Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)